THE CELLBLOCK TOKEN ECONOMY: TOKEN
REINFORCEMENT PROCEDURES IN A MAXIMUM
SECURITY CORRECTIONAL INSTITUTION FOR ADULT
MALE FELONS¹

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Two experiments were conducted (1) to explore the application of token reinforcement procedures in a maximum security correctional institution for adult male felons and (2) to determine to what extent the reinforcement procedures disrupted the day-to-day lives of inmate participants. In Experiment 1, an expanded reversal design revealed that the combination of praise and token reinforcement was more effective than the combinations of praise and noncontingent token award or direct commands on four common institutional activities. The latter two combinations were not found to be any more effective than praise alone. Experiment 2, which also employed a reversal design, indicated that the high levels of performance observed during the token reinforcement phases of Experiment 1 could be attained without subjecting participants to undue hardship in the form of increased deprivation of either social intercourse or the opportunity to engage in recreational and entertainment activities. Client safeguards are discussed in detail.

DESCRIPTORS: token economy, contingent *versus* noncontingent, daily activities, prison inmates, adults

A beginning has been made in the use of the principles and technology of applied behavior analysis with adult and juvenile offenders in institutional settings. The CASE (Contingencies Applicable to Special Education) projects conducted at the National Training School for Boys in Washington, D.C., aimed to increase the academic skill of youths and to prepare as many as possible either to return to school or pass the

high school equivalency examination (Cohen and Filipczak, 1971; Cohen, Filipczak, and Bis, 1967). To meet these objectives, the CASE team established a 24-hr learning environment based on the principles of applied behavior analysis. Academic skills and IQs increased, as measured by standardized tests, and positive attitudinal changes were also observed. Moreover, once released the youths stayed out of trouble and out of institutions for longer periods of time than the national average. The eventual recidivism figure was not, however, different from that of comparable releasees (Filipczak and Cohen, Noted 1).

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Similarly, a ward was opened at Walter Reed Army Hospital, Washington, D.C., to treat soldiers diagnosed as having character or behavior disorders (Boren and Colman, 1970; Colman and Boren, 1969). The treatment program was based on the assumption that these men had failed in the military, and previously in civilian life, because of deficits in their behavioral repertoire. The program's objective was to teach soldiers the education and recreation skills, personal

habit patterns, such as planning and performing consistently, and interpersonal skills that would make their presence and performance important to other members of their military unit.

In follow-up, the performance of 46 men released from the Walter Reed project was compared to that of 48 comparable soldiers who received either routine disciplinary action or general psychiatric treatment. Of the soldiers in the Walter Reed group, seven had completed their tour and 25 were functioning in a unit (69.5% "success"), while 14 had either been administratively discharged from duty, were AWOL, or were in a stockade (30.5% "failure"). Of the comparison group, one had completed his tour and 12 were on active duty (28.3% "success"), while 33 were administratively discharged or in a stockade (71.7% "failure") (Colman and Baker, 1969).

The early work of the Experimental Manpower Laboratory for Corrections (EMLC), operated by the Rehabilitation Research Foundation and located at Draper Correctional Center in Elmore, Alabama, developed and implemented efficient and effective methods of encouraging adult offenders to excel in remedial academic instruction and vocational skill training (Clements and McKee, 1968). Contingency management procedures generated increases in both the quantity and quality of academic work performed in the classroom. Overall progress in the program was substantial: offenders enrolled in the projects averaged gains of 1.4 grades per 208 hr of programmed instruction. High school equivalencies were earned by 95% of those who qualified for and took the GED, and nine former students entered college after leaving prison (McKee and Clements, 1971).

Studies such as these are only the beginning of a behavioral analysis of the problems confronting the criminal justice system. The scope of problems to which this approach has been applied is circumscribed, and the evaluative research that has been conducted, although promising, is certainly not conclusive. The work done suggests, however, that this approach has the

potential of being as productive when applied to the behavior of clients of the criminal justice system as it has been in the mental health, health-related, and educational professions. It is particularly unfortunate, therefore, that the Task Force on Corrections of the National Advisory Commission on Criminal Justice Standards and Goals (1973) suggests otherwise:

Most techniques of behavior modification have been generated either in the mental hospital or for educational use. Although their application to the correctional situation is not necessarily inappropriate, sufficient attention has not been given to the nature, scheduling, and limits of the reinforcement repertory available in the correctional apparatus. Thus, the use of tokens for behavior reinforcement in a reformatory may not be a suitable application of an approach that works in mental hospitals, where the problems of manipulation for secondary gains are not so prominent (p. 516).

Comments such as these reflect the reluctance of members of the criminal justice community to acknowledge that programs derived from a conceptual model that has proven effective with school children, mental patients, and delinquent youths might also prove to be effective with adult felons. In light of this reluctance, the objective of the present research was to assess the applicability of applied behavior analysis procedures to a representative population of imprisoned adult male felons.

This initial effort concentrated on activities important to the operation of the institution. Meeting the day-to-day requirements inherent in the operation of a large institution, such as preparing meals and ensuring that the fundamentals of personal hygiene are observed, is a practical concern of high priority to virtually all correctional administrators. It frequently appears, however, that administrators overemphasize this aspect of institution management, devoting a disproportionate amount of their time

and energies to what most would consider rather perfunctory matters. Although this apparent overemphasis may reflect some administrators' biases regarding the primary functions of their institutions, it is more likely for most a natural outcome of a realistic appraisal of basic operating requirements, the widespread reliance on inmate labor for the performance of necessary work assignments, and the lack of an effective motivational system that encourages inmate workers to complete the tasks expected of them.

The decision to deal with activities important for the operation of the institution was based on three assumptions. First, it was reasoned that correctional administrators probably will not have either the time or the inclination to turn their attention to the difficult problems involved in preparing the offender for return to the community until they can meet the basic requirements of institutional management. Second, it appeared probable that a conceptual framework that enabled administrators to deal effectively with what they considered to be practical problems would be acceptable for use in the design and operation of offender rehabilitation programs. Third, it was concluded that the objective of the experiment was in no way harmful to prospective inmate participants and would instead prove to be in their best interest. Not only did the proposed behavior modification regimen de-emphasize the use of aversive control procedures and, consequently, attack what appears to be a major factor underlying the generally debilitating effect of imprisonment (Milan and McKee, 1974), but it also offered the inmates an incentive to practise and strengthen general employability skills, such as attending to directions, following instructions, accepting constructive criticism, and working toward task completion, that would benefit them when they returned to the community.

EXPERIMENT I

The objectives of this experiment were to explore the feasibility of extending the use of ap-

plied behavior analysis procedures to the day-to-day activities of adult male felons, and to probe the potential contribution of such procedures to management and rehabilitation programming efforts within a maximum security correctional institution. This investigation focused on the effects of token reinforcement procedures on the performance of activities important for the orderly and hygienic operation of all large institutions, and sought to determine the manner in which various arrangements between behaviors and token awards influenced the inmates' performance of those activities.

METHOD

Participants

Fifty-six inmates incarcerated at Draper Correctional Center, Elmore, Alabama, a maximum security state institution whose all-male population consisted primarily of younger offenders serving sentences for their first or second felony conviction, participated. The only general constraint governing consideration for participation was that inmates be eligible for either parole or unconditional release within 90 days of the project's termination date. The initial token economy cellblock population of 33 inmates was drawn at random from those who had volunteered for this study and a related Manpower Development and Training (MDT) Project. A second random drawing determined which of the initial 33 residents of the token economy cellblock would fill the 20 positions open in the MDT Project. The remaining 13 participants who resided on the token economy cellblock but were not enrolled in the MDT Project continued to perform their routine institutional work assignments.

The 23 inmates who later joined the token economy cellblock population as replacements for those who left the project were, within the guidelines of the general constraint mentioned above, selected at random from the general population of the institution. The transfer of these inmates to the token economy cellblock was

treated as a routine administrative matter. However, all participants could, as a total of five did, petition to discontinue their participation in the project by submitting a standard request for a cellblock transfer to the institution's classification officer. The classification officer evaluated these petitions and, if he found them reasonable and appropriate, approved the transfer. If the inmate still desired to discontinue his participation in the cellblock token economy after the transfer was approved and space was located in another cellblock, the transfer was accomplished. The decision to discontinue participation in the project in no way altered the inmate's projected release date or diminished the general quality of his life within the institution relative to the period before his enrollment in the project. The average daily census during the course of the 420 days of the project was 22 inmates, with the 56 inmates residing on the token economy cellblock for an average of 99 days.

The mean age of the 56 inmates at the time of their inclusion in the project was 23.6 yr, with a range of 16 to 54 yr; 42 (75%) were 25 yr of age or younger. Thirty-one (55%) were white and 25 (45%) were black. Their mean grade level, as indexed by the Tests of Adult Basic Education, was 7.4 grades, with a range of 2.9 to 12.3 grades. Their mean IQ, as measured by either the Otis Test of General Ability or the Wechsler Adult Intelligence Scale, was 88.3, with a range of 64 to 112. Of the 56 inmates, 19 (34%) were sentenced from counties with populations greater than 250,000; seven (13%) from counties with populations between 100,000 and 250,000; 12 (21%) from counties with populations between 50,000 and 100,000; 14 (26%) from counties with populations between 25,000 and 50,000; and four (7%) from counties with populations less than 25,000.

Seventeen (30%) of the inmates had been previously incarcerated as adult felons, during which time they served an average of 15.0 months, with a range of 15 days to 120 months. The average length of the sentences that they were serving was 54.6 months, with a range of

12 to 300 months. The offenses for which they were serving sentences are listed in Table 1. The distribution of offenses in the token economy cellblock population reflected that of the institutional population in general. Many inmates had been convicted of multiple offenses. Crimes against property were the most common offenses, with relatively smaller numbers of inmates serving sentences for crimes against persons or for statutory or "victimless" crimes.

Setting

The inmates were housed and the project conducted in the second (top) floor of one of Draper Correctional Center's six two-story wings. The area was a remodelled dormitory subdivided into various rooms used as dormitories, classrooms,

Table 1

Offenses committed by residents of token economy cellblock.

<i>Offenses</i>	<i>Number^a</i>	<i>Per Cent</i>
<i>Crimes against property</i>	55	69.6
Grand larceny	27	34.2
Burglary	17	21.5
Second-degree burglary	6	7.6
Buying, receiving, or concealing stolen property	4	5.1
Attempted burglary	1	1.3
<i>Crimes against person</i>	13	16.5
Robbery	8	10.1
Assault with intent to murder	2	2.5
Child molestation	1	1.3
First-degree manslaughter	1	1.3
Second-degree murder	1	1.3
<i>Statutory or victimless crimes</i>	11	14.0
Escape	2	2.5
Possession of marijuana	2	2.5
Forgery	1	1.3
Perjury	1	1.3
Possession of barbiturates	1	1.3
Possession of LSD	1	1.3
Sale of marijuana	1	1.3
Violation of probation	1	1.3
Violation of state narcotics law	1	1.3

^aThe total number of offenses is greater than the number of residents of the token economy cellblock because 18 of the residents were serving sentences for two or more offenses.

study halls, recreational areas, and staff offices. It was adequately lighted and ventilated, and provided sufficient floor space both to house the inmates and to operate the project. All support (food, clothing, medical, *etc.*), general security, and custody related services (supervision of telephone, mail, and visiting privileges, *etc.*) were provided by Draper staff. All inmates and project staff members were subject to and followed the general rules, regulations, policies, and procedures established by the Alabama Board of Corrections.

All staff members who participated in this project had a background in applied behavior analysis. Before and during the operation of the Cellblock Token Economy, 40 correctional officers received training and supervised practicum experience in applied behavior analysis (Smith, Hart, and Milan, 1972). The ages of the officers, who were representative of the correctional staff in general, ranged from 23 to 67 yr, with a mean of 49.7 yr. Their reported grade levels ranged from the seventh grade to 1 yr of college, with a mean of 11 grades. Their tested grade levels, as determined by the Tests of Adult Basic Education, ranged from 3.2 to 10.9 grades, with a mean of 6.7 grades. Approximately 90% of the officers had lived one-half or more of their lives in Alabama; 65% of these in Elmore County (the location of the correctional institution), and 35% in bordering counties that, like Elmore County, were predominantly agrarian communities. Two of the officers were black, and none was an ex-offender.

There were three sequential training cycles. The first was completed before the cellblock token economy project was begun, and officers who were assigned to the cellblock were drawn from those who had completed that first cycle of training. Additional training in the specifics of the tasks they were to perform was provided through detailed instructions and modelling expected behavior. Of the four research staff members assigned to the cellblock, two had high school diplomas and on-the-job training in applied behavior analysis, and two had baccalaure-

ate degrees with formal course work in applied behavior analysis; two were black and a third had previously served time within the institution as a convicted murderer. The project was directed by a Ph.D. psychologist and consultation was provided by a second Ph.D. psychologist. Conflicts between the correctional and research staffs were resolved by the project director unless they involved the general policies and procedures of the institution. In such cases, conflicts were resolved jointly by the project director and the warden of the institution.

Typically, a correctional officer supervised the cellblock during each weekday morning and early afternoon while the research staff assumed responsibility for its operation the remainder of the weekday and evening, as well as the entire day on weekends and holidays. However, a research staff member frequently worked with and observed the correctional officer as he supervised the cellblock, and a correctional officer occasionally assisted a research staff member with the operation of the cellblock. Hereafter, the term "staff member" is applied interchangeably to members of the correctional and research staffs; whether the term refers specifically to a correctional officer or a member of the research staff is usually, but not always, dictated by the time of day and the day of the week under consideration.

The Tokens

Tokens consisted of "points" that were acquired and expended through a simulated checkbook banking system. Each inmate was provided with an individualized book of standard checks. The use of the simulated banking system and the individualized accounts precluded the exchange of tokens among inmates, thereby reducing the ease with which the backup reinforcers could be acquired without engaging in the target behaviors. The token reinforcement system was in effect for approximately 7 hr each weekday (from 5:30 to 7:30 a.m., and from 4:30 to 9:30 p.m.) and for 16 hr during weekends and holidays (5:30 a.m. to 9:30 p.m.). The hours of exclusion

represent those times during which inmates typically left the cellblock to work or to participate in vocational training.

Backup Reinforcers and Exchange Procedures

The backup reinforcers were items and activities that could be dispensed and monitored on the token economy cellblock. They consisted of access to various reinforcing event areas (a lounge, television viewing room, and poolroom), as well as time in the institution at large (areas other than the token economy cellblock) and, by means of this procedure, access to a wide variety of potential backup reinforcers (*e.g.*, relatives and acquaintances who were in the institution but not residing on the token economy cellblock, weekend movies, club meetings, and recreational activities available in the remainder of the institution). In addition, small commodities, such as cigarettes, soft drinks, snacks, *etc.*, could be purchased in a token economy canteen operated by the project. Finally, Sears' and Penney's catalogs were available for examination from the token economy canteen, and inmates wishing special items not regularly carried by the canteen could order them if they appeared in either of the two catalogs.

If an inmate wished to enter a reinforcing event area, he first wrote a check for the required amount and deposited it in a collection box at the door. An additional check was required at the beginning of each successive clock hour (*e.g.*, from 5:30 p.m. to 6:30 p.m., *etc.*). Inmates could leave and re-enter the reinforcing event area any number of times during each clock hour, the only requirement being that they had written a check for that clock hour and deposited it in the appropriate box. Time spent in the remainder of the institution during the hours the token economy was in operation was recorded on time cards that inmates punched on a time clock as they left from and returned to the cellblock. These times were then totalled and paid for at the end of each day. A staff member made periodic rounds of the cellblock throughout the day to collect all checks near the end of each hour,

to prepare the deposit boxes for the next hour's expenditures, and to check for unauthorized access to the reinforcing event areas on the cellblock and unauthorized departures from the cellblock to the remainder of the institution.

The token economy canteen was open one-half hour every evening and one additional half hour in the late morning on weekends and holidays. To obtain items from the canteen, inmates wrote checks in the exact amount of the to-be-purchased commodity and exchanged the check with the storekeeper for that item. In order to purchase items from the Sears' and Penney's catalogs, an inmate deposited the point cost of the desired item in a special order account. The canteen then ordered the item from the catalog sales department of the company. Inmates were prohibited from withdrawing points from the special order account or from changing their order.

Three response-cost (fine) procedures were employed to reduce unauthorized access to the back-up reinforcers of the token economy. The objective of the first was to discourage inmates from purchasing more back-up reinforcers than they were entitled to by their earning. To accomplish this, an inmate who had overdrawn his account was charged interest, at the rate of 10% of the overdrawn amount, each day his account remained overdrawn. The second procedure dealt specifically with reducing unauthorized access to the reinforcing event areas on the cellblock. An inmate who entered a reinforcing event area without first placing the required check in the deposit box was fined the hourly cost of the area and given the choice of either then depositing the required check and staying on, or leaving. The third procedure was instituted to discourage unauthorized access to the potential back-up reinforcers available in the remainder of the institution. An inmate who left the cellblock without punching out on the timeclock was considered to have been off the facility since the staff last had evidence he was present (usually the time of the previous routine check) and was charged for the time between then and his return to the cellblock.

Early each morning a point record was completed and posted. On it was an itemized accounting of each resident's earnings and expenditures on the previous day and the resultant balance carried forward to the present day. To prevent the long-term accumulation of points and a possible decline in the reinforcing value of each day's potential earnings, the number of points inmates could carry forward from each Sunday to the following Monday was limited to 600, excluding points that were being saved in special order accounts for catalog purchases. Those with overdrawn accounts were not permitted to purchase commodities from the token economy canteen, to enter the various reinforcing event areas on the token economy cellblock, or to leave the cellblock routinely for the remainder of the institution during the hours the token economy was in operation. These restrictions were lifted when a posted point record indicated that they had overcome their point deficits and that their accounts were no longer overdrawn.

Inmates with overdrawn accounts were, however, permitted unlimited access to the two dormitories of the token economy cellblock, to the hallways and lavatory, and to a "free room" containing wooden tables and chairs. In addition, they could leave the cellblock at no cost to obtain meals, to tend to health needs and legal matters, to conduct institutional business, to mail letters, and to place telephone calls and receive visitors as further regulated by general institutional policies. Finally, all inmates were allowed to leave the cellblock at no cost either to perform their institutional job or participate in vocational training and, if they wished, exercise outside at the noon-time break during the weekday hours when operation of the token economy was suspended.

Target Behaviors and Token Award Procedures

The target behaviors were termed "morning activities" and consisted of (1) arising at a determined hour, (2) making the bed, (3) cleaning the area in the general proximity of the bed, and (4) maintaining a neat and well-groomed

personal appearance. Typical payoff and cost values of representative target behaviors and backup reinforcers are presented in Table 2. These values were subject to change to answer experimental questions or to maintain balance in the token reinforcement system. Changes in payoff values, which typically involved experimental operations, were announced the day before they took effect, while changes in cost values, which were typically undertaken to maintain balance within the token economy, were announced three to five days before they were introduced.

The scoring of the four morning activities was on an all-or-none basis. Each inmate was briefed on the scoring criteria when he entered the project, and the criteria themselves were posted on a bulletin board. The criterion for arising at the appointed hour had to be met and scored between 5:30 and 7 a.m. weekdays or between 5:30 and 9 a.m. weekends and holidays. The cutoff time for the remaining three morning activities was extended one-half hour, to 7:30 a.m. weekdays and 9:30 a.m. weekends and holidays. Within these time constraints, the scoring criteria for the four morning activities were:

1. *Arising at the appointed hour.* An inmate was scored as arising on time when he was observed not in physical contact with any part of his or any other bed.

2. *Bed made.* An inmate was credited with having made his bed if the bottom sheet, top sheet and first blanket (when present) were tightly tucked all around under the mattress; if the second blanket (when present) was folded and placed at the foot of the bed and on top of the top sheet or the first blanket, and if the pillow was smoothed, flattened, and placed at the head of the bed on top of the top sheet or the first blanket.

3. *Clean living area.* Different criteria were established for inmates assigned to top and bottom bunks. If a bunk bed was occupied by only one inmate, that inmate was scored on the basis of the requirements for the occupants of both the top and bottom bunks.

Table 2
Point Values of Representative Target Behaviors and Backup Reinforcers

<i>Target Behaviors</i>	<i>Points Awarded</i>
Morning activities	
Arising on time	60
Bed made	60
Living area neat and clean	60
Personal appearance	60
Educational activities ^a	
Student performance	two per min (estimated)
Tutor performance	two per min (estimated)
Assigned maintenance tasks ^b	
Sweep main hall (back half)	60
Empty trash cans in recreation room	60
Mop front steps and landing	120
Dust and arrange furniture in television room	120
<i>Backup Reinforcers</i>	<i>Points Charged</i>
Activities available on the token economy cellblock	
Access to television room	60 per hr
Access to pool room	60 per hr
Access to lounge	60 per hr
Canteen items available ^c	
Cup of coffee	50
Can of soft drink	150
Ham and cheese sandwich	300
Pack of cigarettes	450
Leisure time away from token economy cellblock	one per min

^aStudents were paid on a performance- rather than time-contingent basis. Point values for units of academic material were based on an empirically derived estimated study time per unit and awarded when unit tests were passed.

^bAlthough only four are presented here, there was a sufficient number of maintenance tasks to ensure that all residents had the potential of earning 120 points by completing their assignments. Additionally, residents could volunteer for supplementary maintenance tasks to increase their daily point earnings.

^cAlthough only four are listed here, a large variety of items was available in the token economy canteen.

Top bunk. An inmate sleeping in a top bunk was scored as having cleaned his living area if both the top of and the floor below the adjacent dresser were free of dust (to the touch) and trash (bits of paper, burnt matches, cigarette butts, etc.) and if these areas and the inmate's bunk were free of personal articles (clothing, towels, shoes, etc.).

Bottom bunk. An inmate with a bottom bunk was credited with having cleaned his living area if the floor beneath the bunk was free of trash and if that area and the inmate's bunk were free of personal articles (shoes were permitted below the bed if lined up beginning at the wall).

4. *Neat and well-groomed personal appearance.* An inmate was credited with presenting a neat and well-groomed personal appearance if he were clean-shaven (either after a visual inspection or, if the visual inspection was inconclusive and permission had been asked of and given by the inmate, to the touch), if his hair was combed, if his t-shirt and/or shirt was tucked into his pants, if his pants were zipped and/or buttoned, if his belt (when present) was buckled, and if his shoelaces (when present) were laced and tied.

The lights in each of the two dormitories of the token economy cellblock were turned on at

5:30 a.m. weekdays and at 7:30 a.m. weekends and holidays. Beginning then and for the following 2 hr, a staff member continuously circulated through the two dormitories as the inmates arose and performed the morning activities. As he moved through the dormitories, the staff member greeted each inmate in an informal and friendly manner, rated each inmate's performance of the four morning activities, and provided feedback concerning whether or not the performances met the established criteria.

When an inmate's performance of an activity did not meet the criteria, the inmate was praised for those portions of his performance that did meet criterion, informed of deficiencies, and given the opportunity to correct his performance. If, for example, an evaluation of an inmate's personal appearance revealed it was acceptable except for untied shoe laces, the staff member would typically have said something like: "Your personal appearance is generally acceptable. Your shave looks good and your clothes are fine, but you haven't tied your shoe laces yet. You know you are expected to do that too. I'll be around again in a few minutes to check again if you want."

When an inmate's performance of a morning activity met the established criteria, either when first examined or after a deficiency had been noted and corrected, the inmate was so informed and praised for his good performance. At this same time during those conditions of the token economy under which points were awarded contingent on the satisfactory performance of morning activities, the inmate was also instructed to add the number of points his performance represented to the point balance of his checking account. This latter procedure constituted the token reinforcement operation.

The staff member then recorded the activities completed and, when appropriate, the points earned on a master data sheet. This sheet was then used to determine the percentage of morning activities completed and, during the token reinforcement conditions of the token economy, the number of points earned for the completion

of morning activities by each inmate that day. The data reported thus represented the inmate's final level of performance, either when the performance of activities met the criteria when first examined or after deficiencies had been noticed and inmates had been afforded the opportunity to make corrections. When such a procedure is employed, it is critical that special care be taken to ensure that the resultant data reflect the direct effect of the contingencies explored, rather than correlated changes in staff behavior. In this instance, for example, it was possible that the staff might provide more corrective feedback and encouragement to inmates to improve their performance under conditions in which the award of points was contingent on successful completion of morning activities than during the comparison conditions. To minimize this possibility, the staff members who collected the data in question were well-practiced in the formalized routine described above, and adhered to it strictly throughout all experimental conditions.

Experimental Conditions

The experiment consisted of 13 experimental conditions: (1) Baseline₁, (2) Officer Commands, (3) Baseline₂, (4) 60 Points Noncontingent₁, (5) 60 Points Contingent₁, (6) 90 Points Contingent, (7) 60 Points Contingent₂, (8) 60 Points Noncontingent₂, (9) Zero Points, (10) 60 Points Noncontingent₃, (11) 60 Points Contingent₃, (12) Announce Baseline₃, and (13) Baseline₃. Data collection was restricted to weekdays during the first three experimental conditions. It was expanded to include weekends when the token economy was introduced in the fourth experimental condition and continued daily for the remainder of the 420 days of the project.

1. *Baseline₁*. This and the following two conditions preceded implementation of the token economy. In preparation for this condition, the scoring criteria for the four morning activities were explained to each inmate and posted on the token economy cellblock bulletin board. The inmates were informed that they were expected to

complete each activity each day and that their performance would be recorded. During this condition, a correctional officer toured the token economy cellblock on weekdays between 5:30 and 7:30 a.m. and openly recorded the activities completed by each inmate.

During this and all subsequent conditions, inmates were informed whether or not their performance of the morning activities met the scoring criteria. If an activity met its performance criterion, the officer acknowledged this and praised the performance. If an activity did not, the officer informed inmates of their deficiencies and offered them the opportunity to correct their performance. At the same time, the officer refrained from employing the various coercive techniques typically employed to motivate performance in correctional institutions.

2. *Officer Commands*. Throughout the *Baseline*₁ condition, the correctional officer assigned to the token economy cellblock during the morning shift insisted that he could improve the inmates' performance of the morning activities if only he were given the opportunity to do so. During this condition, the officer supplemented the procedures of the *Baseline*₁ condition with whatever tactics he deemed necessary and appropriate to motivate inmate performance. As he saw fit, he stood by and provided direct supervision and harassment as inmates completed the activities, assigned extra work on the cellblock to those who failed to complete activities, or threatened to write formal disciplinary reports on the inmates with the lowest levels of performance. No disciplinary reports were written for nonperformance of the morning activities, however, for the officer had previously entered into an agreement, which was enforced throughout the experiment, that disciplinary reports would not be written for minor infractions such as these because they frequently resulted in an inmate's transfer to another cellblock within the institution or to another institution within the system. This restriction precluded the possibility that the officer would use the *Officer Commands* condition to "select-out" the inmates he consid-

ered troublesome or not deserving of inclusion in the project. This condition cannot, therefore, be interpreted as a test of the control procedures practised in the remainder of the institution. Moreover, the officer employed the tactics that were available to him in an unsystematic and unquantifiable manner. Despite these two limitations, the condition was deemed worthy of examination, for it represents the officer's "best efforts" in motivating the inmates' performance of the morning activities.

3. *Baseline*₂. Identical to the *Baseline*₁ condition.

4. *60 Points Noncontingent*₁. This condition was employed (1) to determine the effects of general changes in the operation of the token economy cellblock that occurred when the token economy was introduced (limited access to the backup reinforcers; the availability of commodities, such as cigarettes and snacks, not previously available, etc.) on the performance of the morning activities and (2) to separate these from the specific effect of the contingent relationship between the performance of these activities and the award of points, which was explored in the following conditions. Throughout this condition, 60 points were awarded on a noncontingent basis (i.e., independent of whether or not performance met the established criteria) for each of the four morning activities. The operation of the project was expanded to include weekends and holidays as well as weekdays. Points were awarded from the first day of this condition. Beginning on the second day, inmates were required to exchange points in order to partake of the backup reinforcers of the token economy.

5. *60 Points Contingent*₁. During this condition, 60 points were awarded on a contingent basis (i.e., only when performance met the established criteria) for each of the four morning activities either when first rated or after deficiencies had been noted and inmates afforded the opportunity to improve their performance. Unless the contrary is indicated, these general procedures were followed throughout the remainder of the token economy.

6. *90 Points Contingent*. During this condition, the number of points awarded for each completed activity was increased by 50% (to 90 points), thereby raising the potential number of points that could be earned for the four morning activities by 120 points from 240 to 360 points.

7. *60 Points Contingent₂*. The procedures were identical to those followed during the *60 Points Contingent₁* condition.

8. *60 Points Noncontingent₂*. The procedures were identical to those followed during the *60 Points Noncontingent₁* condition.

9. *Zero Points*. This condition was similar to the *Baseline* conditions in that no points were awarded for completion of the morning activities. It differed from the *Baseline* conditions in that the token economy remained in operation, other behaviors continued to earn tokens, and access to the back-up reinforcers was contingent on the exchange of tokens. To maintain token availability at approximately the same level as the preceding conditions, the 240 points per inmate that were no longer available for completion of the morning activities were distributed among the remaining target behaviors during this condition alone.

10. *60 Points Noncontingent₃*. Identical to the *60 Points Noncontingent₂* condition.

11. *60 Points Contingent₃*. Identical to the *60 Points Contingent₂* condition.

12. *Announce Baseline₃*. The procedures followed during this condition, which began one week before the final return-to-baseline condition of the experiment, were identical to those of the *60 Points Contingent₃* condition. This condition differed from the preceding condition in that when it was instated, all inmates were informed of the day the token economy would end, and a notice to that effect was placed on the cellblock bulletin board. The one-week warning allowed residents of the cellblock to expend the points they had accumulated.

13. *Baseline₃*. Procedures were identical to those in effect during the *Baseline₁* and *Baseline₂* conditions.

RESULTS

Reliability of Measurement

To obtain estimates of interobserver agreement on the performance of the four morning activities, the staff member on duty was accompanied by a second staff member as he rated and recorded inmates' performance. Each staff member independently scored each inmate's performance before the staff member in charge informed the inmate of the quality of his performance. There was a total of 28 of these sessions, occurring on weekday mornings distributed evenly throughout the experiment. The percentage of agreement for each day was calculated by dividing the number of agreements on the occurrence of the target behaviors by the number of agreements plus the number of disagreements and multiplying by 100. Agreements on the non-occurrence of the target behaviors were disregarded. The percentages of agreement ranged from 54% to 100%. The average agreement for arising at the appointed time was 95.7%; for bed made, 95.2%; for cleaning the living area, 94.9%; and for presenting a neat and well-groomed appearance, 95.0%. The overall agreement averaged 95.2%.

Findings

The following analysis of the effects of the experimental conditions deals primarily with data summarizing the daily performance of the four morning activities and then secondarily with one or more of the activities alone when those data deviate from the summarized data to a sufficient degree to so warrant. The daily percentage of the four morning activities completed by all inmates of the token economy cellblock throughout the 420 days of the experiment are presented in Figure 1.

The mean percentage of morning activities that met the performance criterion during the 11 days of the *Baseline₁* condition was 66.4%. During the nine days of the *Officer Commands* condition, when the correctional officer on duty exerted his "best efforts" to motivate the per-

Fig. 1. Per cent of morning activities completed under the 13 conditions of Experiment I.

formance of the morning activities, the mean percentage of morning activities meeting criteria was 63.7%. The mean percentage of morning activities meeting the performance criteria during

the five-day *Baseline₂* condition was 68.6%. The data from these first three experimental conditions reveal that correctional officer's aversive control-oriented "best efforts" during the *Officer*

Commands condition had no demonstrable effect upon the inmates' performance of the four morning activities.

The mean percentage of morning activities completed during the 35 days of the *60 Points Noncontingent₁* condition rose to 74.7%. Examination of the data suggests, however, that the improvement in performance after the token economy was introduced was transitory, and that performance during the latter half of the condition was lower than during the first half and comparable to that of pretoken economy *Baseline* periods. The mean percentage of morning activities meeting the performance criteria during the first half of this period (82.0%) was markedly higher than during the second half (66.9%), while the mean percentage of activities completed during the second half was not different from that of the pretoken economy *Baselines*. It appears, then, that introduction of the token economy *per se* facilitated performance of the four morning activities, but that this improvement was short-lived, with the level of performance gradually returning to that observed before the token economy's introduction.

During the 28 days of the *60 Points Contingent₁* condition, a mean of 86.0% of the morning activities met criteria. This was higher than that observed during the *60 Points Noncontingent₁* condition. Moreover, performance of the activities improved over the course of this condition, with the mean percentage completed during the second half (93.3%) higher than that of the first half (78.6%). The *90 Points Contingent* condition sought to assess the effect of a moderate (50%) increase in token reward on the performance of the to-be-reinforced behavior. During the 16 days of this condition, the mean percentage of activities scored as completed was 89.6%, not different from the terminal level of performance under the *60 Points Contingent₁* condition.

A mean of 93.6% of the morning activities was completed during the 19 days of the *60 Points Contingent₂* condition. This was not different from either the level of performance ob-

served during the *90 Points Contingent* condition or the terminal level of performance under the *60 Points Contingent₁* condition. It must be concluded, therefore, that in this instance the 50% increase in token reward explored in the *90 Points Contingent* condition did not facilitate performance. This, however, might be the result of a ceiling effect, for performance levels were already markedly high when the condition was introduced.

During the 28 days of the *60 Points Noncontingent₂* condition, a mean of 78.1% of the morning activities were completed. This was not different from the terminal level of performance under the *60 Points Noncontingent₁*, but was lower than both the terminal level of performance during the *60 Points Contingent₁* condition and the level of performance under the *60 Points Contingent₂* condition. These data indicate that the response-contingent award of tokens precipitated a clear improvement in performance with approximately 90% or more of the morning activities completed each day, a higher level of performance than under any other condition.

The *Zero Points* condition allows a comparison of the effects of the noncontingent award of tokens and the absence of token award. During the 12 days of this condition, a mean of 65.0% of the morning activities was completed, not different from the level of performance under the *60 Points Noncontingent₂* condition. A mean of 67.4% of the activities was completed during the 12 days of the *60 Points Noncontingent₃* condition. This level of performance was not different from the levels of performance observed under either the *Zero Points* condition or the *60 Points Noncontingent₂* condition, indicating that the use of noncontingent "incentives" is no more effective in motivating performance than is contingent praise in the absence of any such incentives which, in turn, is markedly less effective than contingent token reinforcement.

The *60 Points Contingent₃* condition was in effect for the remainder of the token economy. During the 177 days of this condition, a mean of 94.1% of the morning activities was performed

satisfactorily. As would be predicted, this level of performance was higher than that observed during the preceding *60 Points Noncontingent₃* condition but not different from that of the preceding *60 Points Contingent₂* condition or from the terminal level of performance of the *60 Points Contingent₁* condition. Performance of the four morning activities during the one-week *Announce Baseline₃* condition averaged 93.7%.

The percentage of morning activities completed during the *Baseline₃* condition was lower (81.3%) than during the preceding *60 Points Contingent₃* condition. Contrary to that which would be predicted, performance during this condition was superior to that observed during the pretoken economy *Baseline* periods. However, Figure 1 reveals a steady decline in performance over the course of this condition, with the percentage of activities completed during the second half of the condition (76.5%), only slightly higher than the percentage of activities completed during the pretoken economy *Baseline* periods and under the *60 Points Noncontingent* conditions.

A comparison of those conditions in which token award was contingent on performance of the morning activities with those in which tokens were either unavailable or awarded on a noncontingent basis reveals striking differences in response variability as well as in over-all response levels. It appears that introduction of token reinforcement procedures not only raised the general level of performance but also reduced day-to-day variations in response probability, and that subsequent manipulations in the contingencies of reinforcement controlled response variability in much the same manner as they did mean levels of performance.

Individual Performance Records

The group data discussed above revealed the manner in which the various contingencies subjected to experimental examination influenced the averaged performance of the token economy cellblock population. As would be expected, however, a review of the inmates' individual rec-

ords revealed considerable variation in performance levels. Some inmates performed at consistently high levels throughout the various experimental conditions, while others performed at only moderate levels. Cumulative records of one of the highest performers (J.C.) and one of the lowest performers (J.D.) for the four morning activities throughout the first third of the experiment are shown in Figure 2.

The performances of J.C. and J.D. approximate an "envelope" that roughly contains the performances of the remaining inmates of the token economy cellblock. J.D. appears to have had the higher level of performance of the two during the three pretoken economy phases. The performance of J.C. increased radically after the token economy was introduced, however, while the performance of J.D. continued relatively unchanged during the *60 Points Noncontingent₁* condition. J.D.'s performance then improved markedly during the *60 Points Contingent₁* condition and continued at a moderately high level during the *90 Points Contingent* and *60 Points Contingent₂* conditions, while J.C.'s performance continued relatively unchanged. J.D.'s performance showed only some disruption during the *60 Points Noncontingent₂* condition and continued at a low level throughout the *Zero Points* and *60 Points Noncontingent₃* conditions. Although the performance of both improved during the *60 Points Contingent₃* condition, the performance of J.C. was somewhat more consistent than that of J.D.

As would be predicted, however, the similarities in the patterns of J.C.'s and J.D.'s performances in response to the contingencies examined are striking, with the various contingencies examined affecting the performance of both in the same manner, albeit to differing degrees: the behavior of neither was affected by the *Officer Commands* condition, with both showing fairly low levels of performance throughout the three pretoken economy phases. The performance of both was highest during those conditions in which token award was contingent on performance (the *60* and *90 Points Contingent* condi-

Fig. 2. Individual cumulative records for two inmates of the completion of the four morning activities under the first 10 conditions and first portion of the eleventh condition of Experiment I.

tions) and lowest when token award was either absent (the *Baseline*, *Officer Commands*, and *Zero Points* conditions) or unrelated to the completion of the morning activities (the *60 Points Noncontingent* conditions), although J.C.'s performance faltered only slightly under the latter conditions. Including even this minor variance from the expected, the various contingencies explored were clearly related to similar shifts in response probability for each resident of the token economy cellblock. Although consistency of performance and magnitude of change differed from inmate to inmate, direction of change from contingency to contingency was replicated for each inmate.

DISCUSSION

This experiment examined the effectiveness of various token economy procedures in motivating

the performance of adult male felons institutionalized in a maximum security correctional institution. Performance-contingent token reinforcement was shown to be a considerably more effective motivator of inmate performance than the praise of the *Baseline* phases, the coercive procedures of the *Officer Commands* phase, and the noncontingent incentives of the *60 Points Noncontingent* phases which, in turn, did not differ among themselves. It should not be concluded, however, that praise alone had no effect, for no attempt was made to evaluate inmate performance in the absence of both praise and token reinforcement. It is possible that elimination of praise for performance of the morning activities would have resulted in a drop in performance below that observed in the *Baseline* conditions of this experiment. It may be concluded, however, that performance-contingent

token reinforcement in conjunction with praise was a considerably more effective motivator of inmate performance than was praise alone.

Similarly, it should not be concluded that the superiority of token reinforcement to the procedure employed by the correctional officer during the *Officer Commands* condition demonstrates that the token economy is a more effective motivator of inmate performance than are the aversive control procedures typically employed within the correctional institution, for the correctional officer was prohibited from employing the full range of negative sanctions that he could normally bring to bear to ensure the performance of these four activities. The aversive control procedures that have been developed and refined over the years are probably as effective or more effective than the token procedures employed here in motivating inmate performance. The token economy is, however, a considerably more effective motivator than is the correctional officer's "best effort" without recourse to the full range of aversive control procedures that would normally be available to him. Additionally, the consistently high levels of performance and reduced day-to-day variability generated by contingent token reinforcement demonstrate that the token economy is indeed a viable alternative to such aversive control procedures.

Finally, the deterioration of performance after the token economy was terminated at the end of the experiment is to be expected. Indeed, it would be surprising if the performance of the inmates had continued unchanged, for the power and importance of the contingent relationship between completion of the morning activities and token reinforcement in maintaining performance had been previously demonstrated by the deteriorations of performance observed during those phases of the token economy in which tokens were either awarded on a noncontingent basis or were not awarded at all. The objective of this experiment was to explore alternatives to existing inmate management procedures, not to develop a regimen wherein the behavior of inmates was changed in a manner that would per-

mit the correctional officer then to maintain the performance of the morning activities in the absence of token reinforcement. This general objective would be warranted in a comprehensive rehabilitative effort for those activities that can be fostered within the institution and that have meaning for the inmate when he is released and/or have impact on the probability that the offender will succeed in the community to which he returns. This demonstration of the effectiveness of applied behavior analysis procedures with adult felons does, however, indicate that such procedures have the potential of playing a central role in the design and operation of comprehensive rehabilitative programs as the criminal justice system expands its offender rehabilitation efforts.

The cost of operating the token economy canteen was computed by totalling the census of the token economy cellblock for all days the canteen was in operation and dividing the resulting figure into the total cost of items stocked in the canteen and ordered from catalogs. The average cost of operating the canteen, which was in competition with the institution store, where the Board of Corrections sold (for "real" money) similar items, was 61 cents per man per day. Although the per-man cost for operating the token economy canteen was relatively low, even this could be reduced if potential reinforcers in the institution were incorporated into the token economy. If such things as *extra* recreation, telephone, and visiting privileges, for example, were added to the reinforcing event menu, it is quite probable that they could effectively compete with the offerings of the canteen. Not only would such extras reduce canteen expenditures, they would also increase the reinforcing properties of the tokens and, thereby, the probability that to-be-reinforced activities would be completed.

Ideally, however, the institution would abolish the practice of selling goods for profit through its store and instead operate it in the same manner that the token economy canteen was operated. Some inmates receive an abundant supply of

funds from their family and friends, while others receive only the small amount (50 cents every two weeks) provided by the institution. Those with extensive funds can purchase virtually anything they wish, while those with no funds must turn to prison rackets and homosexual prostitution to get whatever money they can. If the institution store were employed as an adjunct to management and rehabilitation programs, the cost of stocking and operating it could be justifiably assumed by the Board of Corrections. Such a procedure would serve two equally important functions: first, it would provide the administration with powerful incentives with which to motivate performance of institutional assignments and participation in rehabilitative programs. Second, it would ensure that all inmates had the potential of equal access to the items offered in the store and, by so doing, move toward the elimination of the unequal distribution of wealth in the institution and the regressive effects of this on the inmate population.

EXPERIMENT II

The emphasis of Experiment I was on the manner in which various arrangements between inmate activities and potential reinforcers influenced the inmates' performance of those activities. The results clearly demonstrated higher levels of sustained performance under conditions in which a contingent relationship existed between behavior and reinforcer than under alternative possible arrangements. The data generated in that demonstration do not, however, reveal to what extent, if any, the token economy and the contingencies involved therein altered other aspects of the inmates' day-to-day existence in the institution. The objective was a reasonable parity between what was expected of the inmates (the morning activities and assigned maintenance tasks that the correctional center administration routinely demanded of all inmates, and the rehabilitation-oriented involvement in the leisure-time remedial education program as a student and/or tutor that the project staff sought to

foster in the token economy participants) and what the inmates could expect in return (television viewing, recreation, and other activities available to inmates within the correctional center, as well as the tangible commodities dispensed by the token economy canteen). The purpose of Experiment II was to determine whether or not the token economy in Experiment I exerted on participants undue hardship in the form of increased deprivation of social intercourse and/or recreational activities.

METHOD

Response Definitions

A checklist consisting of classes of activities in which inmates of the correctional center might engage was constructed to enable a topographical analysis of the daily activities of the participants of the cellblock token economy project. In developing the checklist, research staff, correctional center administrators, and inmates generated lists of activities in which inmates of the institution could engage. These lists were combined and the items refined, with closely related or overlapping activities united and unobservable or inferred activities operationally defined or deleted. The composite list was then further refined during a tryout period before collection of the data reported.

The resultant Behavior Observation Checklist (BOC) consisted of 58 operationally defined classes of activities, such as *Eating*, *Listening to Radio/Sports*, *Lying Down/Awake*, *Reading/Book*, *Standing*, *Talking with Others/Religion*, *Student*, etc. In the administration of the BOC, raters were instructed to choose the more interactive, more informative categories in preference to their less interactive, less informative alternatives. For example, if an inmate was lying down, eyes open, and a radio adjacent to his bed was broadcasting a clearly audible baseball game, he was rated as *Listening to Radio/Sports* instead of *Lying Down/Awake*. Similarly, if an inmate was observed sitting at a desk in the remedial education area of the cellblock, a textbook before him,

and his head and eyes oriented towards the book's open pages, he was rated as *Student* in preference to either *Reading/Book* or *Sitting*. Each inmate was rated in only one category, with every inmate on the cellblock census rated during each administration of the checklist. A copy of the 58-item BOC is available on request.

Data Collection Procedures

The BOC was administered at 45-min intervals, beginning at 5:00 p.m. and terminating at 9:30 p.m. on weekdays, and beginning at 6:30 a.m. and terminating at 9:30 p.m. on Saturdays, Sundays, and holidays. Thus, the BOC was administered seven times each weekday and 21 times each Saturday, Sunday, and holiday. Each administration of the BOC required approximately 5 min. The staff member responsible for the token economy cellblock at the time of the scheduled observation toured the cellblock and rated the activities of all inmates on the cellblock census.

The resulting data were supplemented in part by the inmates' recording, by means of time clocks and punch cards as described in Experiment I, their departing and returning to the token economy cellblock. These recording procedures were an integral part of the token economy. They were, however, begun approximately one month before the token economy was introduced and were continued for approximately one month after the token economy was terminated.

Experimental Conditions

This experiment consisted of three data collection phases: (1) *Baseline₁*, (2) *Token Economy*, and (3) *Baseline₂*. The observations reported were conducted during the Thursdays and Saturdays of each condition.

Baseline₁. This condition consisted of observations made during the five consecutive weeks preceding the *Officer Commands* condition of Experiment I. The general procedures followed

on the token economy cellblock were those described for the *Baseline₁* condition of Experiment I.

Token economy. The observations occurred during the five consecutive weeks at the midpoint of the token economy of Experiment I, at which time the *60 Points Contingent₃* condition was in effect.

Baseline₂. This condition consisted of the five consecutive weeks following termination of the token economy of Experiment I.

The BOC was administered seven times each Thursday and 21 times each Saturday during each week of the three five-week periods, resulting in a total of 140 administrations under each of the three experimental conditions.

RESULTS

Reliability of Measurement

Reliability estimates were obtained in approximately one of every six administrations of the BOC. For each, a second staff member toured the token economy cellblock with the primary observer and independently rated the activities in which the residents of the cellblock were engaged. An overall percentage of agreement based on frequency data across all categories was computed for each reliability check by dividing the number of agreed-upon observations by the total number of observations made and multiplying the resulting figure by 100. Sixty-nine reliability estimates were obtained throughout the three conditions. The mean percentage of agreement was 90.5%.

Data Reduction

For each category, the frequency data generated during each BOC administration were summed across the 140 administrations performed during each of the three conditions of the experiment. Closely related categories were then grouped together, and low-frequency activities (not more than one occurrence per 100 individual ratings during any of the three conditions), which were unrelated to either the larger

categories or to the remaining alternative low-frequency categories, were themselves grouped together in a *Miscellaneous* category. Eight major categories plus the residual *Miscellaneous* category emerged from this process.

1. *Not Present on Cellblock*: number of inmates residing on the token economy cellblock who were not physically present at the times of the observations. It was derived by subtracting the number of entries during each administration from the cellblock census at the time of the rating.

2. *Noninteractive*: a combination of the specific categories that indexed inmates as present on the token economy cellblock but not engaged in any discernible or significant activity. Represented here are such BOC categories as *Asleep*, *Sitting*, and *Walking*.

3. *Recreation/Entertainment*: this groups together activities such as *Games and Puzzles/Group*, *Listening to Radio/Music*, and *Watching Television/Education; News*.

4. *Conversation*: primary activity of an inmate talking to or listening to another inmate or a staff member. It excludes such activities as talking with other inmates in the course of a pool game (which would be rated *Games and Puzzles/Group*) and listening to a teacher lecture in the remedial education classroom (which would be rated *Student*).

5. *Reading*: a combination of more specific categories, such as *Reading/Book*, *Reading/Letter*, and *Reading/Magazine*, indexing the reading of specific types of materials.

6. *Eating/Grooming*: this category groups such related BOC activities as *Drinking and Eating*, *Grooming*, and *Urinating/Defecating*.

7. *Housekeeping*: inmate activities involved in both the cleaning and general upkeep of areas around bunks (*Maintenance/House*) and in the performance of the assigned maintenance tasks necessary for the upkeep of the cellblock in general (*Maintenance/Unit*).

8. *Education*: all forms of inmate participation in the remedial education program as either a student or a tutor of students.

9. *Miscellaneous*: this category consists of low-frequency, residual BOC activities, such as *Exercising*, *Fighting*, *Horseplaying*, *Participating in Hobby*, and *Writing/Letter*.

Findings

A preliminary examination of the data generated by representative inmates as they recorded, by means of time clocks and punch cards, the times they left and returned to the token economy cellblock indicated that introduction of the token economy had little, if any, impact upon either the inmates' movement within the institution or their involvement in leisure-time recreation activities. Although there was some day-to-day variability under each condition of the experiment, those inmates who spent the bulk of their time away from the cellblock during the *Baseline* conditions continued to do so during the *Token Economy* conditions. Similarly, those inmates who only rarely either left the token economy cellblock to participate in recreational activities during the *Baseline* conditions continued to refrain from doing so during the *Token Economy* conditions.

These findings are complemented by the data resulting from the administrations of the BOC as summarized in Table 3, which depicts the percentage of ratings falling within each of the nine summary categories under the three conditions of this experiment. The most commonly rated category of the BOC during each of the three experimental conditions was *Not Present on Cellblock*. On average, one-third of the inmates were absent from the cellblock during the observations performed under the *Baseline₁* condition, and this figure changed virtually not at all during the *Token Economy* condition and the following *Baseline₂* condition. The percentage of inmates engaged in *Recreation/Entertainment* activities dropped slightly, from approximately 18% to 14%, after the token economy was introduced, and then increased to 31% after the token economy was terminated.

The percentages of inmates rated in the *Conversation*, *Eating/Grooming*, *Education*, and

Noninteractive categories exhibited a similar pattern. All were relatively low during the *Baseline*₁ period, increased somewhat under the *Token Economy* condition, and then declined during *Baseline*₂. Excepting the *Conversation* category, each was lower during *Baseline*₂ than during *Baseline*₁. The percentages of inmates observed either *Reading* or *Housekeeping* decreased both during the token economy and after it terminated. The percentage of inmate activities in the *Miscellaneous* category decreased after the token economy was introduced and then increased only slightly after it ended.

Table 3

Per cent of ratings of inmate activities on the behavior observation checklist falling within nine summary categories under the three conditions of Experiment II.

Summary Category	Baseline ₁	Token Economy	Baseline ₂
Not present on cellblock	33.3	32.7	33.9
Non-Interactive	24.8	31.5	20.0
Recreation/Entertainment	17.8	13.5	30.6
Conversation	4.5	6.0	4.6
Reading	4.2	3.3	2.2
Eating/Grooming	3.8	4.0	2.5
Housekeeping	3.6	3.0	2.3
Education	0.0	2.7	0.0
Miscellaneous	8.0	3.3	3.9

DISCUSSION

The results of this comparison of the day-to-day activities of token economy participants during the token economy with those both before its implementation and after it terminated indicate that the improvements in behavior observed in Experiment I were achieved without curtailing the leisure-time recreational activities of the inmates involved. The *Baseline* data suggested that the opportunity to spend leisure time in the remainder of the institution was a potentially powerful backup reinforcer for the token economy, and this opportunity was included as such when the token economy was implemented. However, the contingencies employed do not ap-

pear to have restricted the movement of the inmates to and from the remainder of the institution, since about the same percentage of inmates were not present on the cellblock during the token economy as during the baseline periods preceding and following it. It may be concluded, then, that the utilization of time away from the cellblock as a backup reinforcer in the token economy did not in any way interfere with the participants' interaction with acquaintances not residing on the token economy cellblock, nor with the opportunity to attend the weekend movies, club meetings, and other recreational activities available in the remainder of the institution.

The token economy appears to have occasioned a slight increase in the proportion of time participants were not engaged in any important activities or in any discernible interactions. However, this increase is not reflected in a comparable drop in the degree to which participants engaged in recreational and entertainment activities, such as playing pool and watching television, for participation in these activities does not appear to have been significantly influenced by introduction of the token economy. After the token economy was terminated, however, inmate participation in recreational and entertainment activities increased to a level nearly twice that observed before the token economy was introduced. This increase is difficult to explain. It might be a result of the introduction of additional recreational equipment throughout the token economy or to changes in the inmates' patterns of behavior during the token economy. Alternatively, it might reflect the turnover in the cellblock population during the latter stages of the token economy and a consequent shift in the interests of participants. In any case, the *Baseline*₁ and *Token Economy* data are in general agreement and support the general observation that introduction of the token economy did not curtail either the participants' social intercourse or their participation in recreational or entertainment activities.

Also of interest is the amount of time inmates devoted to housekeeping and educational activi-

ties. Although the target behaviors of Experiment I were members of the *Housekeeping* category, this experiment reveals that the procedures involved in the token economy did not force participants to spend a disproportionate amount of time involved in these routine institutional activities. Indeed, if the token economy had any effect on the amount of time inmates spent performing these tasks, it appears that it was to lower it, for the percentage of inmates observed engaged in housekeeping activities was lower during the token economy than preceding it. On the other hand, the token economy did encourage inmates to devote some of their leisure time to the rehabilitation-oriented remedial education program, for the percentage of inmates observed participating in the education program was higher during the token economy than either before or following it. It certainly cannot be claimed that the cellblock token economy encouraged regimentation or institutionalization at the expense of the inmates' participation in rehabilitation-oriented endeavors. Indeed, the data presented here suggest the opposite.

GENERAL DISCUSSION

This research demonstrates the applicability of token reinforcement procedures to a representative population of imprisoned adult felons. Moreover, it also demonstrates that token reinforcement procedures may be successfully deployed within the correctional institution without subjecting the inmate to increased hardship or deprivation. However, as the criminal justice system becomes more research-oriented in its quest for effective methods of offender rehabilitation, it increases the possibility that it will sanction poorly conceived and poorly executed experimental projects. Such research may have the potential of not only harming the offender but also outraging the public to such a degree that subsequent research endeavors and the potential benefit they offer the offender are blocked. The criminal justice system must take decisive steps to guard against this possibility, and every effort

must be made to protect the physical and psychological well-being of the inmate.

To ensure the protection of the offender, the criminal justice system should insist that its professional staff routinely submit their experimental projects to the review of their peers throughout the professional community. By so doing, the criminal justice system will further guarantee that these programs are of the highest quality and in the best interests of all concerned. A formal peer review policy not only ensures that the professionals within the criminal justice system are abreast with the most advanced thinking in the field but also that their experimental endeavors receive the scrutiny and constructive criticism essential to program refinement.

Although the combination of a thoroughly qualified professional staff and a formal policy of peer review would be expected effectively to ensure the offender's safety and well-being, it is desirable that the criminal justice system also open its experimental programs to public view and inspection. An informed public contributes to the safeguarding of the offender, for it better ensures the speedy elimination of those projects that either exert an undue hardship upon the offender while under the care of the criminal justice system or have a detrimental effect on his adjustment once he returns to the community.

In addition, the potential contribution of the offender, both to experimentation within the criminal justice system and to the safeguarding of himself and his fellow offenders, should not be underestimated. The offender, by dint of his intimate knowledge of the interworkings of the criminal justice system and the inmate subculture, can provide the professional staff information through advice and counsel that it would otherwise take them years to acquire. The research staff that includes ex-offenders will undoubtedly recognize and take into consideration a number of important variables that it otherwise would be slow to identify or would overlook altogether. Similarly, the research staff that makes provisions both to listen to the suggestions and complaints of its client population—

the offenders—and then to give weight to these when questions concerning the operation of its project are debated, will probably devise more efficient and effective procedures than it would otherwise be capable of developing.

Finally, the criminal justice system must avoid the coerced participation of offenders in experimental projects that seek to research as yet unexamined practices or unvalidated procedures. It is especially difficult, however, to specify the defining characteristics of “voluntary participation” within the context of the operational policies of a correctional institution, for it is quite likely that an inmate’s participation in an experimental project—or, for that matter, in any project—is easily influenced by the promise, be it explicit, implicit, or inferred, that his decision to participate will favorably influence the time of his release from the institution (*e.g.*, positive decision by the parole board, the award of additional “good time”, *etc.*).

It appears, therefore, that the voluntary nature of an experimental program within a correctional institution is best guaranteed when it is made explicit that the refusal to participate, participation itself, and the decision to terminate participation in no way influence an inmate’s date of release from the institution. This is not to imply that demonstrable changes in behavior occurring within the program should not be considered when decisions are made concerning inmates’ eligibility for release. If this is done, however, the voluntary nature of the program may be guaranteed only by taking care to ensure that comparable changes in the behavior of nonparticipants are given equal consideration when decisions concerning their status are made.

The program reported here incorporated the safeguards outlined above. Early in the operation of the cellblock token economy, a five-member review panel composed of prominent psychologists and sociologists visited on-site at Draper Correctional Center and reported their findings to the project’s funding agency. In addition, the project was reported on and discussed at a number of professional meetings. Many of the sug-

gestions made by the members of the review panel and by peers at professional meetings were incorporated in the project. The project itself was under constant public scrutiny. The Board of Directors of the Rehabilitation Research Foundation, which oversaw the project research, consisted of respected professionals and civic leaders. Moreover, throughout its duration, the project was visited by a steady stream of concerned citizens, civic groups, college and university classes, and media representatives.

The project staff included an ex-offender, and regular group meetings were scheduled with the residents of the token economy cellblock for the express purpose of airing their grievances and soliciting their opinions and suggestions, and these played an important part in the staff decision-making process. Participation in the project was voluntary as defined above: not only did participation in the project not influence an inmate’s date of release from the institution, but an inmate could, as slightly less than 10% of the participants did, petition to eliminate himself from the project by following routine institutional procedures, and the decision to terminate participation did not influence either the inmate’s date of release or the quality of his life within the institution relative to his condition before enrollment in the project.

As the criminal justice system develops both a research orientation and a research capability, it will, as the mental health field has, begin identifying shortcomings and validating effective strategies. Experimental projects are of little value, however, unless the criminal justice system makes use of their findings in its dealings with the offender. Those shortcomings that experimental projects reveal should be eliminated from the system. Similarly, strategies and procedures of general applicability and benefit that have been validated in experimental programs should be implemented throughout the system.

Clearly, the nature of some strategies will demand that they continue to be offered on a voluntary basis alone. For example, the effectiveness of aversion therapy in the treatment of alcohol-

ism, drug addiction, and sexual deviancy has been repeatedly demonstrated in the medical and mental health fields (*e.g.*, Rachman and Teasdale, 1969), and these findings undoubtedly would be replicated by careful experimental research in the criminal justice field. Such a demonstration would certainly justify a move on the part of the criminal justice system to make aversion therapy available to those who requested it. Most would agree, however, that any form of coerced participation in such a program would be both unethical and unjust.

Conversely, the nature of some other strategies will demand that they be incorporated within the criminal justice system as standard operating procedures, and, as such, be applied equally with all those with whom the system has contact. The heavy reliance of corrections on punishment and aversive control procedures in its dealings with the inmate population probably contributes to both the unrest in correctional institutions and to the dyssocializing influence a period of imprisonment appears to have on the offender. The present research indicates that it is both more effective and more humane to schedule and award the incentives available in the criminal justice system systematically to encourage productive behavior than it is to threaten and withdraw or withhold them in an attempt to discourage undesirable behavior. Moreover, there is every reason to believe that the routine deployment of these alternative procedures throughout the criminal justice system will contribute to a reduction of the debilitating impact of imprisonment and its regressive effect on the released offender's adjustment in the community.

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